$\therefore\ x=\frac{1}{3}(5-1.48329)=\frac{1}{3}$ of $3.51671=1.17223$. $\therefore\ 100x=\$117.22\frac{3}{10}$, the price to be paid for a \$100-bond at 5%, interest payable quarterly for 10 years, to realize 3% per annum payable quarterly.

Also solved by *J. H. DRUMMOND, H. C. WHITAKER,* and *G. B. M. ZERR.*

NOTE:—Problem 19 was also solved by *J. H. DRUMMOND, M. A. GRUBER, T. L. DeLAND, J. F. W. SHEFFER, G. B. M. ZERR,* and *F. P. MATZ.*

PROBLEMS.

26. Proposed by ALVIN E. SCHMIDT, Winesberg, Ohio.

Show that $abc>(a+b-c)(a+c-b)(b+c-a)$ unless $a=b=c$.

27. Proposed by A. H. BELL, Hillsboro, Illinois. (The problem from H. C. WILKS, Skull Run, Virginia.

An oarsman in rowing a boat down stream 7 miles from A to B and then back requires 12 minutes longer time, than commencing from B, and rowing up and back; the rate of speed for the 1st half of the time is 5 miles per hour, and for the 2nd half of the time is $4\frac{1}{2}$ miles per hour. Required the current.

28. Proposed by H. W. DRAUGHON, Clinton, Louisiana.

The working capacity of a horse is constant between the ages of a and b years, and decreases at a constantly accelerated rate from the age of b years to that of c years, becoming 0 at the latter age. If the value of the horse at the age of a years is d, give a formula for finding his value at any subsequent time.

Solutions to these problems should be received on or before September 1st.

GEOMETRY.

Conducted by B.F.FINKEL, Kidder, Missouri. All contributions to this department should be sent to him.

SOLUTIONS TO PROBLEMS.

14. Proposed by HENRY HEATON, M. S., Atlantic, Iowa.

Through two given points to pass four circles tangent to two given circles.

Solution by the PROPOSER.

In the figure, C and C' the intersection of the common tangents to the two circles are known as the external and internal centers of similitude.

It is not necessary to demonstrate here the following well known properties: